Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TP: \_\_\_\_\_\_\_

CW 51: Dilations & Similarity

**Honors Geometry**

**Part A:** Plot the points from the column “Pre-Image.” Dilate the points by the given scale factor with center (0, 0) and plot and label the images. Write the coordinates of the images in the column, “Image.”

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Pre-Image** | **Scale Factor** | **Image** |
| 1 | A(2, 2), B(3, 4), C(4, 2) | 2 |  |
| 2 | D(-4, 1), E(-3, 2), F(-1, 1) | 2 |  |
| 3 | G(1, -1), H(1, -3), I(3, -3) | 3 |  |
| 4 | J(-8, 8), K(-8, 10), L(-4, 10), M(-4, 8) |  |  |
| 5 | N(-8, -8), O(-8, -4), P(-4, -4), Q(-4, -8) |  |  |

**Part B:** Use the graph below to describe the dilations that map the following pre-images to their images:

6. Triangle ABC to Triangle A’B’C’

7. Triangle DEF to Triangle D’E’F’

8. Quadrilateral GHIJ to Quadrilateral G’H’I’J’

9. Quadrilateral KLMN to Quadrilateral K’L’M’N’

**Part C:** Answer the following questions.

10. Explain what happens to a shape when it is dilated by a scale factor that is less than one.

11. Describe the relationship between the sides of a shape and its image after a dilation of scale factor 2.

12. Explain why a dilation is not a rigid motion.

13. In problem 4, explain how quadrilateral JKLM is related to quadrilateral J’K’L’M’.

**Part D:** Identify the transformation that maps each given pre-image to its image. BE SPECIFIC.

|  |  |
| --- | --- |
| 14. |  |
| 15. |
| 16. |
| 17. |

**Part E:** Create a graph and perform the following dilation.

18. Plot the pre-image:

19. Dilate by a scale factor 4 with center (0,0).